MASPS for ADS-B Rev. A

Tracking Information (committee secretary only)	
Change Issue Number	49
Submission Date	10/23/01
Status (open/closed/deferred)	DEFERRED
Last Action Date	2/01/02

Short Title for Change Issue:	Proposal for an on-condition message that requests specific information from other ADS-B equipped aircraft(s)

MASPS Document Reference:		Originator Information:	
Entire document (y/n)		Name	J. Stuart Searight, FAA WJHTC
Section number(s)	3.4.3.3	Phone	(609) 485-5036
Paragraph number(s)		E-mail	Stuart.Searight@tc.faa.gov
Table/Figure number(s)		Other	

Proposed Rationale for Consideration (originator should check all that apply):	
	Item needed to support of near-term MASPS/MOPS development
	DO-260/ED-102 1090 MHz Link MOPS Rev A
	ASA MASPS
	TIS-B MASPS
	UAT MOPS
	Item needed to support applications that have well defined concept of operation
	Has complete application description
	Has initial validation via operational test/evaluation
	Has supporting analysis, if candidate stressing application
	Item needed for harmonization with international requirements
	Item identified during recent ADS-B development activities and operational evaluations
	MASPS clarifications and correction item
	Validation/modification of questioned MASPS requirement item
	Military use provision item
X	New requirement item (must be associated with traffic surveillance to support ASAS)

Nature of Issue:		Editorial		Clarity		Performance	X	Functional

Issue Description:

By definition, ADS-B is a broadcast system, sending information to all aircraft and ground stations that can receive the ADS-B transmissions. However, there will no doubt be applications developed utilizing ADS-B which would benefit from acquiring specific information from specific aircraft. (Paired approaches on parallel runways is one such example.)

To facilitate such exchanges without consuming too much bandwidth, a possible way to create a "pseudo-crosslink" for non-addressed communications is to have a "Request for Information" report that could be a type on On-Condition report.

Originator's proposed resolution:

See attachment A of this Issue Paper for a proposed implementation of the OC-RFI Report.

Working Group 6 Deliberations:

September 27, 2001: The proposal on which this Issue Paper is based was first presented at the September WG6 meeting as part of working paper 242A-WP-8-01. It was agreed that implemented the OC-RFI report would go beyond the scope of WG6's charter for developing DO-242A. However, it was felt this was an issue that should be documented, so an action item was given to create this Issue Paper.

February 1, 2001: It was agreed that this Issue Paper is to be DEFERRED to a future revision of the MASPS.

This attachment contains proposed changes to DO-242A to implement an on-condition report for a request for information. This material was originally proposed in working paper 242A-WP-8-01 by Jim Maynard.

The following paragraph would be added to section 3.4.3.3 "On-Condition Reports":

OC-RFI: Request For Information Report (section 0). The OC-RFI report is proposed as a way by which one ADS-B participant may request another ADS-B participant to broadcast messages to support other OC reports.

The following new section would be added to define the new on-condition report:

3.4.3.XX On Condition – Request for Information (OC-RFI) Report

Note: The proper place for this information is Appendix M, not the body of the MASPS. It is shown here in this draft only by way of example, to show how this kind of OC report might later be incorporated in the body of the MASPS.

Table 0 shows the format of a possible future On Condition report by which one ADS-B participant might request On Condition reports to be transmitted by another ADS-B participant. The "condition" that causes a participant to transmit a message to support this report is that the participant desires to participate in a pairwise operation with the other participant – the "addressee" to which the message is directed.

Note: Strictly speaking, this report may not be proper for a broadcast system such as ADS-B, because the message that transmits this information is not really broadcast, but is addressed to a particular ADS-B participant. Indeed, messages to support the OC-RFI report might not be transmitted on an ADS-B data link at all, but instead be transmitted on a different data link, that provides an addressed (rather than broadcast) communication service.

Table 3.4.3.XX: On Condition – Request For Information (OC-RFI) Report Definition.

	OC-SO Element #	Contents	# of Bits	Section References	
Transmitting Participant ID	1a	Transmitting Participant Address	16	2.1.2.1.2.1	
	1b	Transmitting Participant's Address Qualifier	4	2.1.2.1.2.2	
Addressee ID	2a	Addressee's Participant Address	16	2.1.2.1.2.1	
	2b	Addressee's Address Qualifier	4	2.1.2.1.2.2	
Requested Information	3	Requested Information	32		
		3a: Request OC-ARV information	1	3.4.3.4	
		3b: Request OC-TSR information	1	3.4.3.5	
		3c: Request OC-TCP information	1	2.1.2.3.5.1	3.4.3.6
		3d: Request OC-TCP+1 information	1	2.1.2.3.5.2	
		3e: Request OC-TCP+2 information	1		
		3f: Request OC-TCP+2 information	1		
		3g: Request OC-AILS information	1	3.4.3.8	
		(Bits reserved for future definition.)	25		
TOA	4	Time of Applicability [1 s resolution]	TBD		

Conditions for transmitting OC-RFI report elements. An ADS-B participant in an airborne aircraft shall (R3.xx) transmit messages to support the OC-TCP report when any of the following conditions are met:

<<Text TBD >>

Update Interval for OC-RFI report elements. <<Text TBD>>

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